



**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

12/12/98

EXAMINER

WILSON, M

ART UNIT	PAPER NUMBER
----------	--------------

1783

5

DATE MAILED:

12/12/98

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/905,254

Applicant(s)
Durkot et al.

Examiner
Monique Wills

Group Art Unit
1745



☒ Responsive to communication(s) filed on Aug 1, 1997

☐ This action is FINAL.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-28 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-28 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 1745

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 contains an improper Markush group. In order to correct this matter, the claim should include the term “*selected* from the group consisting of”.

3. Claim 28 is a method claim, but does not set forth any steps involved in the method, and it is unclear what method applicant is intending to encompass. A claim is indefinite where it merely recites that it is a method without any active, positive steps delimiting how this method is actually practiced.

Art Unit: 1745

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshizawa et al. Patent 5,168,018 in view of Church et al. Patent 4,372,823.

Claims 1-28 are drawn to a gelled zinc anode. The anode comprises: zinc alloy particles, a surfactant, an electrolyte, indium and/or barium, and a thickening agent. Ten to eighty percent of the zinc alloy particles are -325 mesh size or smaller. Additionally, the Applicant claims an electrochemical cell comprising the gelled zinc anode, a cathode, and a separator.

Yoshizawa et al. discloses a gel-like zinc anode. The gel like anode comprises potassium hydroxide, sodium polyacrylate, carboxymethyl cellulose (col 6 lines 61-65), indium hydroxide or indium sulfide (col 6 lines 65-68), zinc alloy powder (col 7 lines 1-2), and a surfactant (col 5 lines 30-35). The anode gel is charged into an electrochemical cell comprising a cathode and separator (col 7 lines 9-15).

Yoshizawa et al. does not disclose the shape or mesh size of the zinc alloy particles.

However, Church et al. teaches fabricating zinc anodes using zinc particles ranging from 5 microns to -325 mesh (col 2 lines 49-55). In the footnote of Table 1, column 4 lines 48-52,

Art Unit: 1745

Church et al. teaches a slurry composition comprising methycellulose-H₂O gelled binder, an anode additive material, and zinc dust.

Therefore, the invention as a whole, would have been obvious to one of ordinary skill in the art at the time the invention was made because, the zinc particles of Church et al. used in the gelled anode of Yoshizawa et al. would yield the anode of the instant claims. Yoshizawa et al. teaches all the constituents of the zinc gelled anode except for the shape and particle size. However, Church et al. teaches that it is conventional to use zinc particles ranging from 5 microns to -325 mesh for zinc anodes. The skilled artisan recognizes that it is highly desirable to obtain homogeneity of the anode powder through out the gel, enabling the anode to be uniformly disposed against the cathode for optimum cell performance. Furthermore, the artisan recognizes that smaller particles provide greater surface area, thus increasing the electrochemical activity of the cell. Therefore, the skilled artisan would be motivated to use zinc material of Church et al. in the gelled anode of Yoshizawa et al. to increase the electrochemical activity and homogeneity of the gel, in order to maximize cell efficiency.

As to the shape of the zinc particles, unless unexpected ameliorative results can be demonstrated from using the particle shaped claimed, the claims are obvious, as the skilled artisan would be able to obtain desired results from particles of the same size.

As to the method of generating an electric current limitation, a battery comprising the constituents described above will inherently generate electric current. Therefore, the claim is obvious, and the limitation is met.

Art Unit: 1745

Conclusion

Any inquiry concerning this communication should be directed to Monique Wills at telephone number (703) 305-0073 .

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique Wills whose telephone number is (703) 305-0073. The examiner can normally be reached on Monday - Friday from 8:30am to 5:00pm.

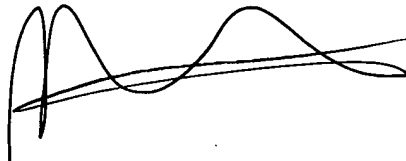
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Maria Nuzzolillo, can be reached on (703) 305-3776.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

**Maria Nuzzolillo
Supervisory Patent Examiner
Technology Center 1700**

MW

11/25/98

A handwritten signature in black ink, appearing to be 'M. Nuzzolillo', written over a horizontal line.